MTH 131-950 Final Exam Information

Our final exam is scheduled for our last class period on Thursday, May 12. The final exam will consist of twenty 5-point problems---one problem from each of the section objectives listed below. Each answer will have the form of a single number, $\pm\infty$, DNE, a single word, or a short phrase. The answer itself will be worth **up to** 2 points. The supporting work or explanation will be worth **up to** 3 points. The supporting work will be scored as follows:

- 0 points - No work or no correct work/explanation
- 1 point - Some correct ideas and work/explanation
- 2 points - The ideas and work/explanation are mostly correct
- 3 points - The ideas, notation, and work/explanation are correct

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Final exam skill list

1. Estimate limits graphically and numerically. (Sec 2.2/Lec 3)
2. Determine one-sided and two-sided infinite limits. (Sec 2.2/Lec 8)
3. Use algebraic techniques to resolve 0/0 indeterminate forms. (Sec 2.3/Lec 5)
4. Classify discontinuities.. (Sec 2.4/Lec 7)
5. Use the limit definition of derivative to evaluate a derivative. (Sec 3.1-3.2/Lec 11)
6. Evaluate derivatives (and higher-order derivatives) using basic differentiation rules. (Sec 3.3/Lec 12-13)
7. Use the chain rule to differentiate compositions of functions. (Sec 3.6/Lec 15)
8. Solve various application problems involving rates of change. (Sec 3.4/Lec 14)
9. Evaluate derivatives involving the inverse trigonometric functions. (Sec 3.7/Lec 17)
10. Compute the derivative of an exponential function of any base. (Sec 3.9/Lec 18)
11. Determine the linearization of a function at a point, and use it to approximate function values near the point. (Sec 4.2/Lec 20)
12. Find the critical numbers of a function. (Sec 4.3/Lec 22)
13. Find the absolute extreme values of a continuous function on a closed interval. (Sec 4.3/Lec 22)
14. Apply the second derivative test to classify relative extrema. (Sec 4.5/Lec 25)
15. Apply L'Hopital's rule to resolve indeterminate forms. (Sec 4.8/Lec 28)
16. Use basic integration rules to evaluate indefinite integrals. (Sec 4.10/Lec 30)
17. Compute a Riemann sum for a function on an interval. (Sec 5.1/Lec 32)
18. Use the Fundamental Theorem of Calculus to evaluate definite integrals. (Sec 5.3/Lec 34)
19. Use and evaluate definite integrals in applications involving area and average value. (Sec 5.3/Lec 33)
20. Use substitution to evaluate definite integrals. (Sec 5.5/Lec 36)